

Statistical bulletin

Deaths registered in England and Wales: 2017

Annual data on death registrations, contains death rates, cause of death data by sex and age, and death registrations by area of residence and single year of age.



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1 . Main points

- There were 533,253 deaths registered in England and Wales in 2017, a 1.6% increase from 2016 and the highest number registered annually since 2003.
- Age-standardised mortality rates (ASMRs) decreased for both sexes in 2017; by 0.4% for males and 0.2% for females.
- Both the number of deaths and age-specific mortality rates for people aged 90 years and over increased in 2017, by 4.4% and 2.9% respectively; most notably for females.
- ASMRs for cancers, respiratory diseases and circulatory diseases continued to decrease in 2017, whilst rates for mental and behavioural disorders, and diseases of the nervous system increased by 3.6% and 7.0% respectively.
- The City of Kingston upon Hull replaced Blackpool as the local authority with the highest ASMR rate in England in 2017, increasing by 7.1% from 2016.
- The infant mortality rate increased for the first time in five years to 4.0 deaths per 1,000 live births; the neonatal rate also increased by 3.6% compared with 2016, whilst the postneonatal rate remained the same.

2 . Statistician's comment

“The number of deaths increased in 2017 to the highest level since 2003. The population is both growing and ageing – when you take those things into account, mortality rates decreased slightly from 2016 to 2017, for both males and females.

“Mortality rates for cancers, respiratory diseases and circulatory diseases have also decreased. However, rates increased for mental and behavioural disorders, such as dementia, and diseases of the nervous system, such as Parkinson's and Alzheimer's. This could be partly linked to a better understanding of these conditions, which may have led to better identification and diagnoses.

“Meanwhile, the number of infant deaths decreased in 2017, but because the number of live births decreased more significantly, the infant mortality rate rose for the first time in five years.”

Vasita Patel, Vital Statistics Outputs Branch, Office for National Statistics.

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3 . Things you need to know about this release

Important information for interpreting these mortality statistics:

- death statistics are compiled from information supplied when deaths are certified and registered as part of civil registration, a legal requirement
- figures represent the number of deaths registered in the calendar year
- figures represent deaths that occurred in England and Wales, these include the deaths of individuals whose usual residence was outside England and Wales
- summary figures published in the release include analysis of causes of death by broad disease groupings, which can be found in Section 10 of the [User guide to mortality statistics](#)
- figures to be published later in the year, in [Deaths registered in England and Wales \(Series DR\)](#) provide more detail on both individual causes of death and [leading causes of death](#), where individual causes are aggregated using a list developed by the World Health Organization (WHO), modified for use in England and Wales

4 . Highest annual number of deaths registered in England and Wales since 2003

There was a 1.6% increase in the number of deaths registered in England and Wales in 2017 (533,253 deaths), up from 525,048 in 2016. This is the highest annual number of death registrations since 2003.

With the exception of 2014 and 2016, the number of deaths has increased each year since 2011; a total increase of 10.1% over the past six years (Figure 1). The number of deaths is affected by the size and age structure of the population. As people are tending to live longer, the population is increasing in both size and age over time, therefore the number of deaths is expected to increase.

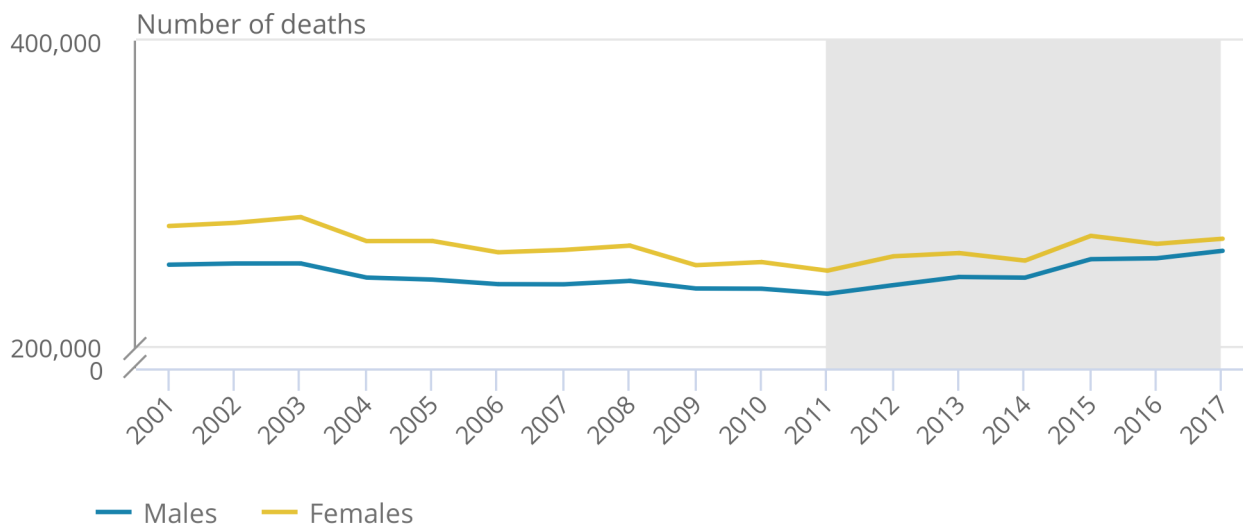
Figure 1: Total number of deaths, by sex, 2001 to 2017

England and Wales

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England and Wales

Number of deaths are generally increasing with the population size and age



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.

The number of male deaths continued to rise for the third consecutive year, a 1.9% increase compared with 2016. The number of female deaths also increased in 2017, by 1.2%, but remained lower than in 2015 (270,575 compared with 272,448).

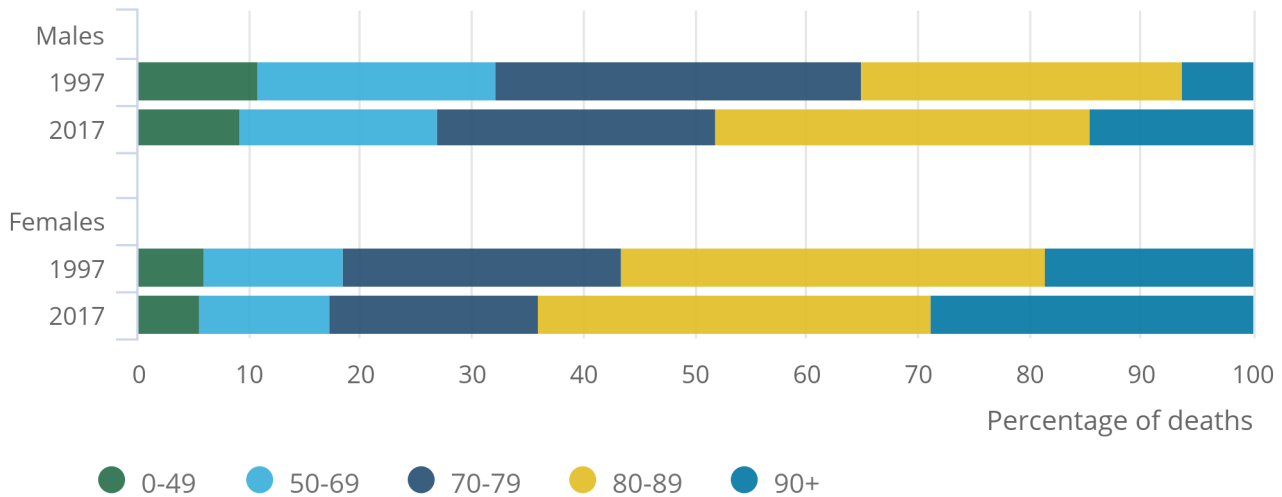
Typically, a higher proportion of male deaths are under the age of 80 years, compared with females, with a much larger proportion of female deaths in older age groups (Figure 2). Over the last 20 years, however, the proportion of deaths in the oldest age groups has increased for both males and females, most noticeably for those aged 90 years and over. The proportion of male deaths at ages 90 years and over has more than doubled over the last 20 years (131.7% increase) and the proportion of female deaths at this age has increased by 55.1%.

Figure 2: Proportion of deaths by age and sex over the last 20 years

England and Wales

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England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.

5 . Age-standardised mortality rates continued to decrease in 2017

Age-standardised mortality rates (ASMRs) are a better measure of mortality than simply looking at the number of deaths, as they take into account the population size and age structure. In 2017, ASMRs decreased slightly for both sexes, with 1,124.0 deaths per 100,000 population for males (0.4% decrease) and 836.8 deaths per 100,000 population for females (0.2% decrease).

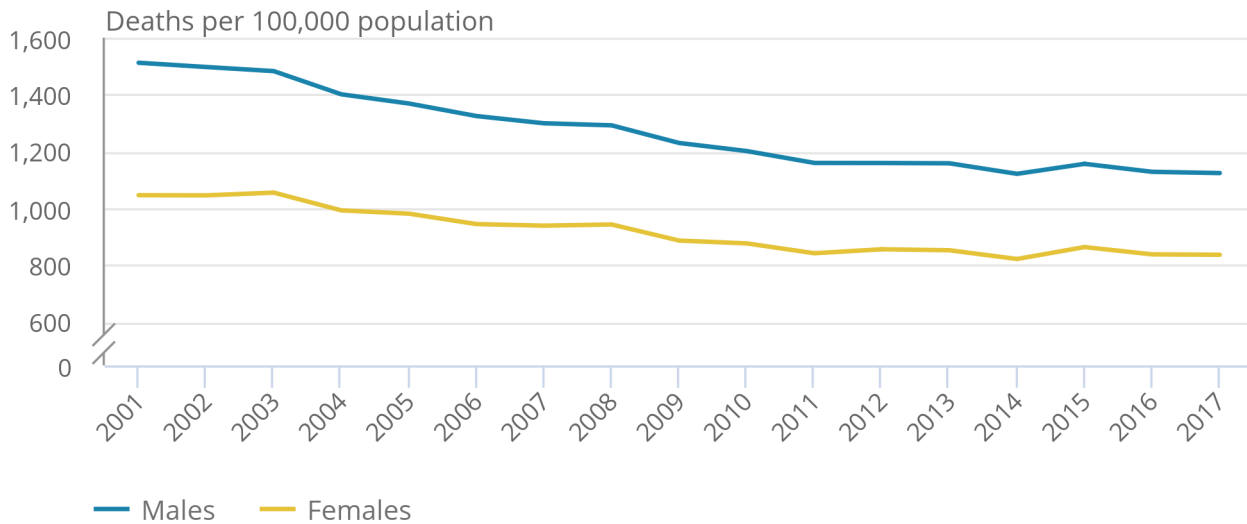
Prior to the current decade, mortality rates had generally been decreasing at a faster rate (Figure 3). This is likely due to improved lifestyles and medical advances in the treatment and diagnosis of many illnesses and diseases. There have also been government initiatives to improve health through better diet and lifestyle. Rates in recent years, however, have started to suggest a [slowdown in mortality improvements](#).

Figure 3: Age-standardised mortality rates (ASMRs), 2001 to 2017

England and Wales

Figure 3: Age-standardised mortality rates (ASMRs), 2001 to 2017

England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.
2. These rates are for all ages and are standardised to the 2013 European Standard Population.

6 . Increase in age-specific rates for ages 90 years and over

Age-specific mortality rates are used to compare mortality at different ages. Age-specific rates for ages 70 to 84 years have generally been decreasing over the last decade and this trend continued in 2017 (Table 1). In contrast, the rates for those aged 85 years and over increased in 2017 — most notably for those aged 90 years and over (2.9%), but still remained lower than the recent peak in 2015.

Table 1: Age-specific mortality rates for age 65 years and over, England and Wales, 2015 to 2017

		65-69	70-74	75-79	80-84	85-89	90+
Age-specific mortality rates	2017	11.9	18.7	33.3	58.8	107.9	221.2
	2016	11.9	19.3	33.6	59.1	107.8	214.9
	2015	11.8	19.6	33.8	61.8	112.4	226.7
% change 2016 to 2017		0.0	-3.1	-0.9	-0.5	0.1	2.9

Source: Office for National Statistics

Notes:

1. Based on deaths registered in the calendar year
2. Age-specific mortality rates represent the number of deaths at a particular age per 1,000 population at that age.

7 . Continued rise in age-standardised mortality rates for mental and behavioural disorders

Deaths in this section have been grouped by the broad cause of death chapter groups, which can be found in Section 10 of our [User guide to mortality statistics](#). These broad groups differ to the [leading causes of death groups](#), where individual causes are aggregated using a list developed by the World Health Organization (WHO), modified for use in England and Wales. The leading causes of death figures will be published in [Deaths registered in England and Wales \(Series DR\)](#) later in the year.

Figure 4 shows the number and percentages of deaths to each of the broad causes by single year of age and sex. Cancer accounted for 28.1% of all deaths registered in 2017 and has remained the most common broad cause of death since 2011. Cancer accounted for 30.5% of all male deaths and 25.7% of all female deaths registered in 2017.

Circulatory diseases, such as heart disease and stroke remained the second most common broad cause of death, accounting for a quarter of all deaths registered in 2017, followed by respiratory diseases, which accounted for 13.8%.

Figure 4: Broad causes of death by sex and single year of age

England and Wales, 2017

There have been fairly steady decreases in age-standardised mortality rates (ASMRs) for the three main broad disease groups (cancer, circulatory and respiratory diseases) over the last decade and this trend continued in 2017 (Figure 5).

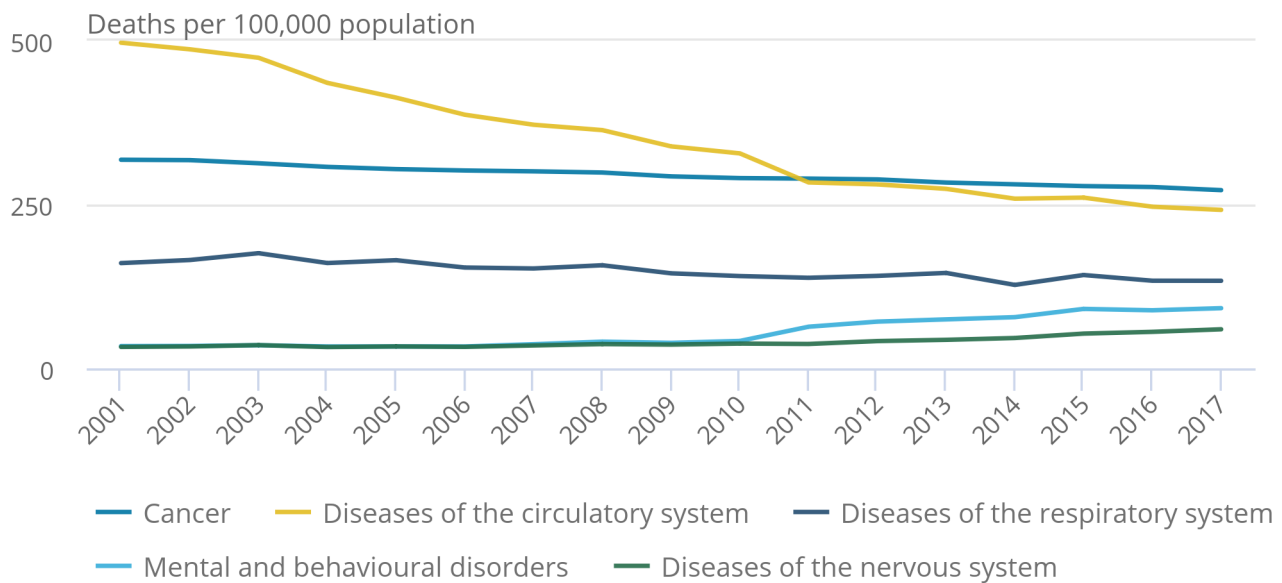
In contrast, the ASMR for mental and behavioural disorders, such as dementia, has more than doubled over the last decade, increasing by 3.6% in 2017. A similar pattern is apparent for diseases of the nervous system, such as Alzheimer disease, for which the rate increased by 7.0% in 2017, a 70.8% increase compared with 10 years ago. Increases in these rates are likely due to improvements in recognition, identification and diagnosis of such disorders.

Figure 5: Age-standardised mortality rates (ASMRs) for the five main broad disease groups, 2001 to 2017

England and Wales

Figure 5: Age-standardised mortality rates (ASMRs) for the five main broad disease groups, 2001 to 2017

England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.
2. These categories correspond to the five chapters of ICD-10 with the largest number of deaths in England and Wales.
3. ASMRs are for all ages and are standardised to the 2013 European Standard Population.

8 . City of Kingston upon Hull had the highest mortality rate in England and Wales in 2017

In 2017, the North East remained the region of England with the highest age-standardised mortality rate (ASMR) (1,090.1 deaths per 100,000 population), despite a 0.8% decrease from the previous year, and London remained the lowest (856.6 deaths per 100,000 population), a decrease of 0.3% compared with 2016.

Mortality rates for some local authorities are based on relatively small populations – therefore rates are often subject to random fluctuations and are consequently less robust. The local authorities with the highest and lowest mortality rates in 2017 are shown in Table 2.

Table 2: Local authorities with the highest and lowest age-standardised mortality rates (ASMRs) in 2017

England and Wales		
	England	Wales
Highest ASMR	City of Kingston upon Hull (1,345.8 deaths per 100,000 population)	Blaenau Gwent (1,272.2 deaths per 100,000 population)
Lowest ASMR	City of London (528.6 deaths per 100,000 population)	Ceredigion (846.9 deaths per 100,000 population)

Notes:

1. Based on deaths registered in the calendar year.
2. Age-standardised mortality rates represent the number of deaths per 100,000 population.

Source: Office for National Statistics

In 2017, the ASMR for the City of London saw a 7.9% decrease from 2016 whilst the ASMR for the City of Kingston upon Hull increased by 7.1%, replacing Blackpool as the English local authority with the highest ASMR. In Wales, the ASMR for Blaenau Gwent also increased in 2017, whilst Ceredigion saw a 5.2% decrease from the previous year (Figure 6).

Figure 6: How have local levels of mortality changed since 2001?

Age-standardised mortality rates (ASMRs) by local authority districts, 2001 to 2017, England and Wales

The substantial variation in mortality rates between different local areas reflects underlying geographical differences in factors such as income deprivation, socio-economic status and health behaviour. It is recognised that higher levels of deprivation are present in the [north of England \(PDF, 1.5MB\)](#) and in the [Welsh valleys \(PDF, 18.2MB\)](#). Increased mortality rates for many causes of death have long been associated with higher [levels of deprivation](#).

9 . Infant mortality rate in England and Wales increased for the first time in five years

There have been small fluctuations in infant, neonatal (deaths under 28 days) and postneonatal (deaths over 28 days and under 1-year-old) rates over recent years, after a series of larger falls in the late 1980s (Figure 7).

There were 2,707 infant deaths in England and Wales in 2017, a small decrease compared with the previous year. However, the infant mortality rate increased for the first time in five years, to 4.0 deaths per 1,000 live births, due to the larger decrease in the number of live births in 2017.

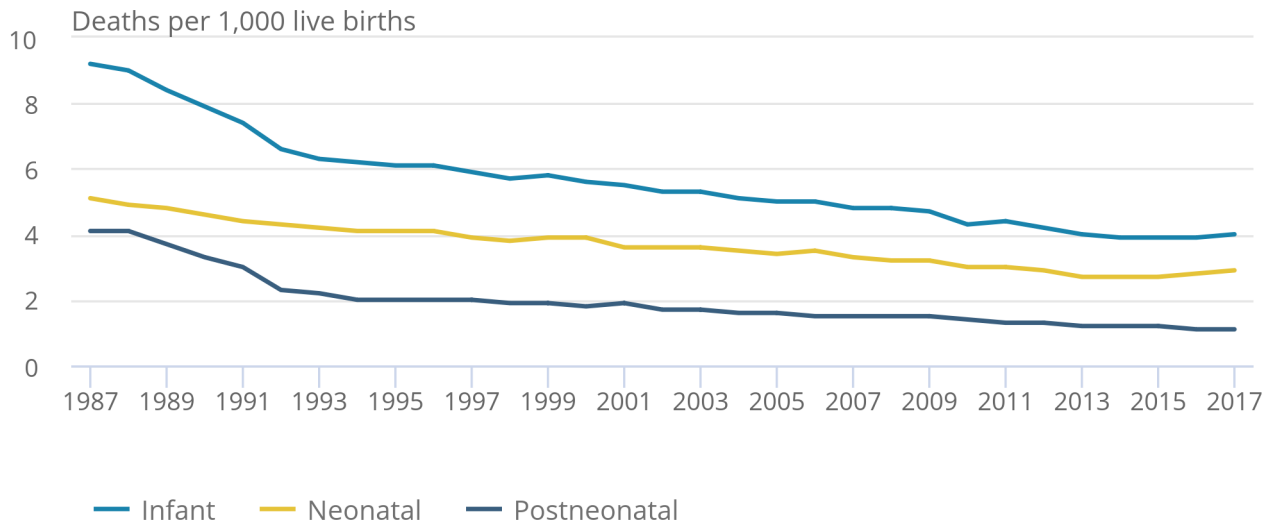
The neonatal mortality rate also increased in 2017, for the second consecutive year, rising to 2.9 deaths per 1,000 live births, while the postneonatal mortality rate remained the same at 1.1 deaths per 1,000 live births.

Figure 7: Infant, neonatal and postneonatal mortality rates, 1987 to 2017

England and Wales

Figure 7: Infant, neonatal and postneonatal mortality rates, 1987 to 2017

England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.

There are many established risk factors for infant mortality; prematurity, low birthweight and multiple births are the most significant in terms of strength of association and consistency. [Risk factors](#) are known to vary according to age at death. For example, the effect of low birthweight and prematurity is stronger in the first 28 days, while socio-economic status is strongly associated with deaths under 1 year. The increased neonatal rate is likely influenced by the [increasing number of extremely pre-term births](#) (below 23 weeks gestation) being recorded as live births in recent years.

Infant mortality rates vary by region and can fluctuate over time. Despite decreasing by 11.3% in 2017, the infant mortality rate remained highest in the West Midlands region of England, at 5.5 deaths per 1,000 live births. The infant mortality rate was lowest in both the South West and North East regions of England, with a rate of 3.1 deaths per 1,000 live births. The infant mortality rate for Wales increased by 9.7% in 2017, up to 3.4 deaths per 1,000 live births.

Variation between areas may reflect underlying differences in maternal factors such as the mother's country of birth, socio-economic status and age ([Child mortality statistics](#) contains further information).

10 . Highest number of deaths in the UK in 14 years

In 2017, the provisional number of deaths registered in the UK was 607,172; the highest recorded in 14 years. The number of deaths increased by 1.7% compared with 2016 and was 0.7% higher than the recent peak in 2015.

In 2017, the number of deaths in Scotland increased by 2.0% to 57,883. This is the highest number of deaths registered in Scotland since 2003. Provisional figures suggest Northern Ireland saw the largest number of death registrations since 1986, with a 3.9% increase in deaths from 2016 (16,036 compared with 15,430).

11 . Links to related statistics

More data on [deaths](#) and [births](#) in England and Wales are available. Commentary on stillbirths is included within [Births in England and Wales, 2017](#).

The number of deaths and death rates for the UK and constituent countries can be found in the [Vital statistics: population and health reference tables](#); an international comparison of numbers of deaths and death rates is also available. Figures for 2017 are due to be published in October to November 2018.

Our [explorable dataset](#) provides more detailed mortality statistics, including cause of death, area of usual residence, sex and age group. This explorable dataset has been specially designed to protect the confidentiality of individuals, where suppression is applied to low counts for areas below region level. Data are currently available for 2013 to 2016, and 2017 death statistics will be available from October 2018 (provisional), alongside our [Deaths registered in England and Wales \(Series DR\) release](#).

Further 2017 death statistics will be published later in 2018, see the [GOV.UK release calendar](#) for more details.

To meet user needs, very timely but provisional counts of death registrations are published:

- [provisional counts of weekly death registrations by sex, age group and region](#)
- [provisional counts of monthly death registrations by local authority](#)

Figures for 2018 have not been subject to the full quality assurance process so are considered provisional. [Final monthly figures for 2017](#) will be published on 24 July 2018.

Special extracts and tabulations of mortality data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and the ONS charging policy, where appropriate). Enquiries should be made to Vital Statistics Outputs Branch by email to vsob@ons.gov.uk or telephone on +44 (0)1329 444110). [User requested data](#) will be published onto our website.

12 . Quality and methodology

This is the first time that final annual death registration statistics for England and Wales have been published for 2017. This release provides summary statistics on deaths, including infant mortality; detailed statistics are published in themed packages between September and March.

Mortality statistics are used for producing population estimates and projections and to quality assure the census estimates. They are also used to carry out further analysis on, for example: life expectancy; health expectancy; causes of death; and to further analyse infant mortality. They also enable the analysis of social and demographic trends.

The [Mortality statistics Quality and Methodology Information](#) report contains important information on:

- the strengths and limitations of the data and how it compares with related data
- uses and users of the data
- how the output was created
- the quality of the output including the accuracy of the data

Our [User guide to mortality statistics](#) provides further information on data quality, legislation and procedures relating to mortality and includes a glossary of terms. Information on how age-standardised mortality rates (ASMRs) are calculated is included.

Death figures reported here are based on deaths registered in the data year. This includes some deaths that occurred in the years prior to 2017 (27,801 deaths). Office for National Statistics (ONS) also takes an annual extract of death occurrences in the autumn following the data year to allow for late registrations. Further information on the [impact of registration delays for a range of causes](#) is available.

There is a large degree of comparability in death statistics between countries within the UK. There are some differences, although these are believed to have a negligible impact on the comparability of the statistics. These differences are outlined in the [Mortality Statistics Quality and Methodology Information](#) report.

The [Revisions policy for population statistics \(including mortality statistics\)](#) is available.

Deaths are cause coded using the World Health Organization's (WHO) [International Classification of Diseases \(ICD\)](#). Deaths are coded to ICD-10 using IRIS software (version 2013). Cause of death reported here represents the final underlying cause of death for ages 28 days and over. This takes account of additional information received from medical practitioners or coroners after the death has been registered.

The infant, neonatal and postneonatal mortality rates in this release have been calculated using the number of deaths registered in the data year. These rates can also be calculated using the number of deaths occurring in the data year; such rates are less timely since the occurrence dataset can only be taken some nine months after the end of the data year to ensure it is acceptably complete.